ABSTRACT

METHOD FOR RECYCLING RUBBER-CONTAINING WASTE

The inventive method includes thermal liquefaction of wastes in an organic solvent at a temperature above 270°C and a pressure up to 6 MPa. The liquid fraction is separated from the undissolved product. The liquid fraction is distilled into the fraction with the boiling temperature below 220°C and the fraction with the boiling temperature above 220°C. Alkyl benzene or the gasoline fraction with a boiling temperature below 220°C is used as an organic solvent at the start-up of the process. Thermal liquefaction of a batch of wastes is carried out in an organic solvent at a temperature from 280°C to 435°C and a pressure at least 2.9 MPa, the organic solvent-waste weight ratio being more than 1.0. The liquid fraction with the boiling temperature below 220°C is subjected to catalytic reforming. A part of the liquid fraction, as subjected to catalytic reforming, with the boiling temperature below 220°C is used as the target product, and the remaining part of the liquid fraction, as subjected to catalytic reforming, with the boiling temperature below 220°C is used as a solvent and returned for thermal liquefaction of a new batch of wastes at a temperature from 280°C to 435°C and a pressure at least 2.9 MPa, the solvent-waste weight ratio being more than 1.0. The process of thermal liquefaction is continued in the said conditions of thermal liquefaction and catalytic reforming for the next and subsequent batches of wastes, while a part of the liquid fraction, as subjected to catalytic reforming, with the boiling temperature below 220°C being returned for thermal liquefaction.